

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2005/018143

A. CLASSIFICATION OF SUBJECT MATTER

G03F7/039 (2006.01), **G03F7/004** (2006.01), **H01L21/027** (2006.01)

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

G03F7/039 (2006.01), **G03F7/004** (2006.01), **H01L21/027** (2006.01)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho 1922-1996 Jitsuyo Shinan Toroku Koho 1996-2005

Kokai Jitsuyo Shinan Koho 1971-2005 Toroku Jitsuyo Shinan Koho 1994-2005

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	JP 6-266109 A (Fuji Photo Film Co., Ltd.), 22 September, 1994 (22.09.94), Par. Nos. [0124] to [0135] (Family: none)	1, 2, 4, 5, 6 3
X	JP 9-211866 A (Shin-Etsu Chemical Co., Ltd.), 15 August, 1997 (15.08.97), Par. Nos. [0113] to [0133] & US 6106993 A	1-6
Y	JP 11-167199 A (Fuji Photo Film Co., Ltd.), 22 June, 1999 (22.06.99), Par. Nos. [0176] to [0179] (Family: none)	3

☒ Further documents are listed in the continuation of Box C.
 ☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"I" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search
02 November, 2005 (02.11.05)Date of mailing of the international search report
15 November, 2005 (15.11.05)Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2005/018143

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 10-274845 A (Fuji Photo Film Co., Ltd.), 13 October, 1998 (13.10.98), Par. Nos. [0157] to [0161] & EP 0869393 A1 & US 6037098 A	3
A	JP 2002-99088 A (JSR Corp.), 05 April, 2002 (05.04.02), Full text (Family: none)	1-6

INTERNATIONAL SEARCH REPORT

International application No. PCT/JP2005/018143
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Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
See extra sheet for details

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee..
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2005/018143

Continuation of Box No.III of continuation of first sheet(2)

The resist composition of claims 1-3, the method for forming a resist pattern of claim 4 and the compound of claims 5 and 6 are considered to be characterized respectively by a polyvalent phenolic compound wherein a part or all of hydrogen atoms in the phenolic hydroxyl groups are substituted by at least one group selected from the group consisting of acid-cleavable dissolution inhibiting groups represented by the general formulae (p1) or (p2) set forth in claim 1.

Such a polyvalent phenolic compound wherein a part or all of hydrogen atoms are substituted by acid-cleavable dissolution inhibiting groups is publicly known as disclosed in JP 6-266109 A (Fuji Photo Film Co., Ltd.), 22 September, 1994 (22.09.94) and JP 9-211866 A (Shin-Etsu Chemical Co., Ltd.), 15 August, 1997 (15.08.97).

Consequently, a polyvalent phenolic compound wherein a part or all of hydrogen atoms are substituted by acid-cleavable dissolution inhibiting groups cannot be a special technical feature. In addition, there is no other common feature which can be considered as a special technical feature within the meaning of PCT Rule 13.2, second sentence among the resist composition of claims 1-3, the method for forming a resist pattern of claim 4 and the compound of claims 5 and 6.

The inventions of claims 1-6, therefore, cannot be considered so linked as to form a single general inventive concept, and thus they do not satisfy the requirement of unity of invention.

A. 発明の属する分野の分類 (国際特許分類 (IPC))

Int.Cl.⁷ G03F7/039 (2006.01), G03F7/004 (2006.01), H01L21/027 (2006.01)

B. 調査を行った分野

調査を行った最小限資料 (国際特許分類 (IPC))

Int.Cl.⁷ G03F7/039 (2006.01), G03F7/004 (2006.01), H01L21/027 (2006.01)

最小限資料以外の資料で調査を行った分野に含まれるもの

日本国実用新案公報	1922-1996年
日本国公開実用新案公報	1971-2005年
日本国実用新案登録公報	1996-2005年
日本国登録実用新案公報	1994-2005年

国際調査で使用した電子データベース (データベースの名称、調査に使用した用語)

C. 関連すると認められる文献

引用文献の カテゴリー*	引用文献名 及び一部の箇所が関連するときは、その関連する箇所の表示	関連する 請求の範囲の番号
X	J P 6-266109 A (富士写真フイルム株式会社) 1994.09.22, 【0124】-【0135】 (ファミリーなし)	1、2、4、 5、6
Y		3
X	J P 9-211866 A (信越化学工業株式会社) 1997.08.15, 【0113】-【0133】 & US 6106993 A	1-6
Y	J P 11-167199 A (富士写真フイルム株式会社) 1999.06.22, 【0176】-【0179】 (ファミリーなし)	3

☒ C欄の続きにも文献が列挙されている。☐ パテントファミリーに関する別紙を参照。

* 引用文献のカテゴリー

「A」特に関連のある文献ではなく、一般的技術水準を示すもの
「E」国際出願日前の出願または特許であるが、国際出願日以後に公表されたもの
「L」優先権主張に疑義を提起する文献又は他の文献の発行日若しくは他の特別な理由を確立するために引用する文献 (理由を付す)
「O」口頭による開示、使用、展示等に言及する文献
「P」国際出願日前で、かつ優先権の主張の基礎となる出願

の日の後に公表された文献

「T」国際出願日又は優先日後に公表された文献であって出願と矛盾するものではなく、発明の原理又は理論の理解のために引用するもの

「X」特に関連のある文献であって、当該文献のみで発明の新規性又は進歩性がないと考えられるもの

「Y」特に関連のある文献であって、当該文献と他の1以上の文献との、当業者にとって自明である組合せによって進歩性がないと考えられるもの

「&」同一パテントファミリー文献

国際調査を完了した日

02.11.2005

国際調査報告の発送日

15.11.2005

国際調査機関の名称及びあて先

日本国特許庁 (ISA/J P)
郵便番号100-8915
東京都千代田区霞が関三丁目4番3号

特許庁審査官 (権限のある職員)

倉持 俊輔

電話番号 03-3581-1101 内線 3231

2H

3408

C (続き) . 関連すると認められる文献		
引用文献の カテゴリー*	引用文献名 及び一部の箇所が関連するときは、その関連する箇所の表示	関連する 請求の範囲の番号
Y	J P 10-274845 A (富士写真フイルム株式会社) 199 8.10.13, 【0157】-【0161】 & EP 086939 3 A1 & US 6037098 A	3
A	J P 2002-99088 A (ジェイエスアール株式会社) 20 02.04.05, 全文 (ファミリーなし)	1-6

請求の範囲 1－3 に記載されたレジスト組成物及び請求の範囲 4 に記載されたレジストパターン形成方法と、請求の範囲 5、6 に記載された化合物は、それぞれ多価フェノール化合物としてフェノール性水酸基の水素原子の一部または全部が、請求の範囲 1 に記載された一般式 (p 1)、(p 2) で表される酸解離性溶解抑制基からなる群から選択される少なくとも一種で置換されている化合物を特徴とするものであると認められる。

しかしながら斯かる酸解離性溶解抑制基で水素原子の一部または全部が置換されている多価フェノール化合物は、JP 6-266109 A (富士写真フイルム株式会社) 1994.09.22、JP 9-211866 A (信越化学工業株式会社) 1997.08.15において記載されているように公知のものである。

したがって、酸解離性溶解抑制基で水素原子の一部または全部が置換されている多価フェノール化合物を特別な技術的特徴であるとする事はできない。そして、請求の範囲 1－3 に記載されたレジスト組成物及び請求の範囲 4 に記載されたレジストパターン形成方法と、請求項 5、6 に記載された化合物との間には PCT 規則 13.2 の第二文の意味において特別な技術的特徴と考えられる他の共通の事項は存在しない。

よって、請求の範囲 1－6 に記載された発明は、単一の一般的発明概念を形成するように連関しているとは認められず、発明の単一性は満たされていない。